

B3

Requested Patent: EP0763192A1

Title:

ULTRASONIC DETECTOR USING VERTICAL CAVITY SURFACE EMITTING LASERS ;

Abstracted Patent: US5590090 ;

Publication Date: 1996-12-31 ;

Inventor(s): DUGGAL ANIL R (US); YAKYMYSHYN CHRISTOPHER P (US) ;

Applicant(s): GEN ELECTRIC (US) ;

Application Number: US19950414833 19950331 ;

Priority Number(s): US19950414833 19950331 ;

IPC Classification: H04R23/00 ;

Equivalents: DE69609466D, DE69609466T, JP10501893T, WO9630731

ABSTRACT:

An ultrasound/vibration detector array includes an electrically pumped vertical cavity surface emitting laser (VCSEL) array. The cavity length of each laser or pixel of the array is modulated by the acoustic field at the point where the acoustic field contacts the pixels. The resulting laser output is frequency modulated by the acoustic field. This modulation is converted to amplitude modulation at the detector head and then either detected with a charge-coupled-device (CCD) array with the information being electrically communicated to the signal processing assembly or sent directly by optical fiber to the signal processing assembly for processing. This ultrasound/vibration detector array provides high frequency bandwidth detection, fine spatial resolution, and minimal electric cabling.